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(54) Title: INTERACTIVE SYSTEM FOR INVESTING PRODUCTS ON A NETWORK
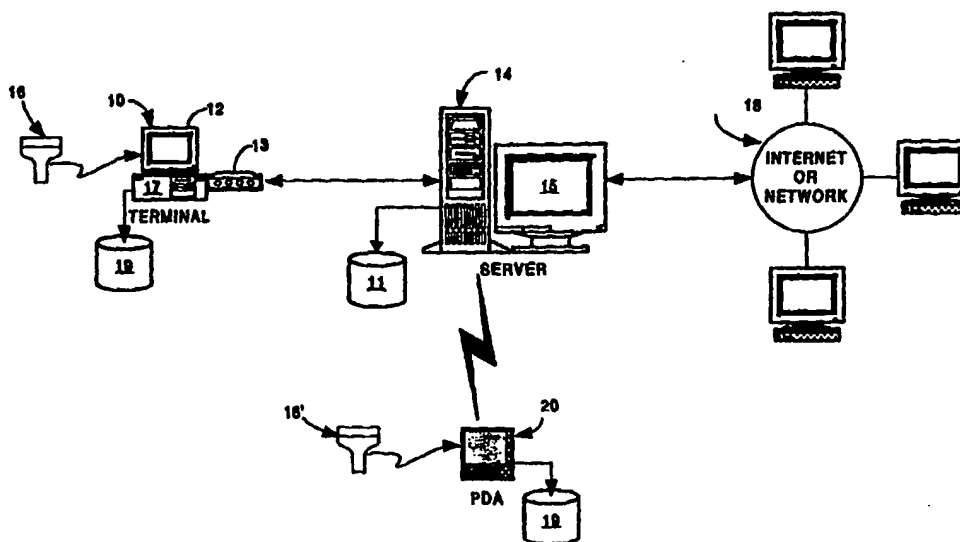
(57) Abstract

An interactive search system for use primarily with a global computer network, e.g. the Internet (18), using a product identifying barcode, such as a UPC code, to rapidly and effectively obtain a supply of related information for presentation to a user. A computer (12) may be used to input a UPC code, taken from a package or advertisement or pre-stored in the computer, to an implementing server on the network. The server (14) contains a database of product and manufacturer identifying UPC codes and uses the input UPC code and the database to identify the manufacturer and is programmed to then perform a search of the network to locate sites relating to or operated by the manufacturer. The server may search the network on a product basis to locate other sites containing the UPC under search.

INTERACTIVE SYSTEM FOR INVESTING PRODUCTS ON A NETWORK

BACKGROUND OF THE INVENTION

1. Field of the Invention. The present invention relates to a system for searching an electronic network, such as the Internet, for product information, and, more particularly, to a method and means by which a user can quickly do a

5　　　product search through databases on a global network with a simple input that enables interactive communication with a server adapted to widely seek and provide the information sought.

2. Description of the Related Art. Global electronic and computer networks, such as the Internet, provide access to a tremendous amount of

10　　information relating to various companies and their products. It is difficult, however, for a user to investigate a particular product on a global computer network when the product is sold under more than one name, or when the user is not sure of the proper name of the product. Similarly, the user may not know who is a manufacturer or a local supplier of the product. It therefore can be quite a time-

15　　consuming and complex procedure to do an effective product search through all of the web sites and databases available that may contain pertinent information.

In a different area of commerce, a system has been developed in the United States for product identification, primarily for use on an actual article, that is implemented with Uniform Product Codes (UPC's). This UPC system is

20　　administered by a Uniform Code Council. A manufacturer interested in utilizing the UPC system registers with the Uniform Code Council and receives a unique manufacturer code. At present, approximately 300,000 manufacturers are registered with the Uniform Code Council. Once registered, the manufacturer assigns codes to each of its own products. The UPC of a product is a combination

25　　of the manufacturer's code and a product code assigned by the manufacturer. To

facilitate product identification, the UPC is encrypted as a barcode and placed on the product, where it is machine readable, such as by a scanner at a supermarket checkout counter, and used to digitally identify the product. Once the product is so identified, the digital barcode information read therefrom may be communicated to

5   many different destinations for accounting and inventory purposes and to various databases for recording and archiving.

The UPC system has been adapted for use with computers and networks, such as the Internet, in various ways. For example, U.S. Pat. No. 5,913,210, to C.C. CALL, discloses a system involving the storing of a plurality of

10   UPCs in respective computers with web addresses (URLs) and storing cross-references of the UPCs and URLs in another computer (URL) which can be accessed by further networked computers using the UPCs to find the respective URLs. Also, U.S. Pat. No. 5,804,803, to B.J. CRAGUN ET AL, discloses the retrieval of a document by a client computer system using a scanned UPC to create

15   a URL location in a first server, from UPC and customer data retrieved from a second server, which URL may be used to obtain the document from the first server. Further, U.S. Pat. No. 5,791,991, to M.E. SMALL, discloses an interactive product promotion system which enables the selection of coupons to be downloaded from the Internet, and then UPCs placed thereon to be scanned to the

20   Internet for rebates.

While the prior art is rife with search systems and techniques for interacting with computer networks, and particularly the Internet, to obtain and exchange information of all sorts, they all tend to be on a one-for-one or step-by-step basis.

25   It is an object of the present invention to provide an interactive system

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whereby an individual can quickly and easily obtain a supply of the available information about a selected search object, such as a product and/or its manufacturers, from a global computer network.

It is another object of the present invention to provide an interactive

5   method and means that enable an individual to search a global computer network and easily obtain a supply of information regarding a selected product, based on a barcode related to the product.

It is a further object of the invention to provide an interactive system for searching a computer network whereby information regarding products and

10   manufacturers can be quickly obtained, aggregated, and stored for use, based on a product's UPC.

It is also an object of the present invention to provide an interactive system for quickly and easily obtaining a supply of information about a selected product and/or its manufacturers or providers from a server using a barcode related

15   to the product.

SUMMARY OF THE INVENTION

The above-stated objects are met by an interactive search system that is directed to interact primarily with global computer networks, particularly the Internet, using a product identifying barcode to rapidly and effectively obtain a

5   supply of product-related information for presentation to a user. In accordance with the present invention, a suitable terminal, typically a desktop computer and modem connection, is used to access an implementing server containing a database of product and manufacturer or provider identifying codes, preferably UPC manufacturer codes. Information relating to a particular product and its

10   manufacturer, is obtained with the product's UPC which may be taken from a package or advertisement or pre-stored in the computer. The UPC can be entered into the computer through manual input numerically, or, alternatively, entered digitally through the use of software and a hand-held scanner adapted to read UPC barcode encryptions. The desktop computer and modem transmit the entire UPC

15   to the implementing server, which reads the manufacturer's code from the UPC and, using the UPC database therein, identifies the manufacturer. The server is programmed to then perform a search of the global computer network or databases contained in local server storage devices to locate sites relating to or operated by the manufacturer. Additionally, the server may search the global computer network

20   on a product basis to locate other sites containing the UPC under search. To aid the server, and reduce search time, it is preferred but not required that the user identify the general category of the product (auto, book, music or movie cassette, food, hardware, software, etc.) when the UPC is entered. Based on the manufacturer information, and/or the selection of product category, the

25   implementing server is preferably programmed to initially search sites where a

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greater likelihood of uncovering a particular UPC exists in addition to searching the local server storage devices. Using "parsing" technology, the server may then "pull out" the product description, transmit it to and place it in the random access memory (RAM) or storage of the desktop computer, and proceed to perform further

5   searching relying on the product description to uncover relevant information. The server can accordingly quickly assemble a collection of product-related and manufacturer information in the RAM or storage of the desktop computer. The collection of assembled information is then available for a user's consideration all at once at any time. Preferably, the assembled information will provide the user with

10   the name of a source for purchasing the particular product, and, further, the server will automatically link the computer with the source's site on the global computer network, or a prearranged site on the server, to permit direct ordering. As will readily be seen, the system of the invention permits an individual to avoid the time-consuming hassle of performing multiple "key word" searches on the global

15   computer network to uncover the desired collection of product-specific information on a step-by-step basis.

In an enhancement of the system, the UPC can be input into a wireless portable computer, e.g., a Portable Digital Assistant (PDA), or a wireless internet or server accessible phone and transmitted either directly or indirectly to the

20   implementing server to obtain product information. With this capability, a customer can investigate a product while present in a retail location and contemplating purchase of the product. The portable computer may be provided with software to interact through a wireless transmission path with the server and obtain the information as described above at the retail location. Conversely, PDA's have been

25   developed which include a scanner for reading an encrypted barcode and software

for deciphering and storing the encryption. These PDA's can be used advantageously to provide an individual with a handy tool for easily collecting UPC's while in conventional retail outlets for immediate or later use.

As another enhancement of the system, an additional database can
5   be created and located in an individual's desktop computer to maintain a library of UPC'S therein. For example, the UPC codes of various purchased products can be entered into the library. The library of UPC's is then transmitted to the implementing server to allow for periodic monitoring of the global computer network to uncover relevant bulletins and/or notices. Thus, for instance, an individual who
10   purchases a product can enter the UPC code into the desktop computer, have the UPC code transmitted to the server, and be automatically informed of any notices relating to the product (e.g., recalls or updates) or similar products. In a preferred embodiment, the server generates a hyperlink connection between the desktop computer and, by activation, the relevant site on the global computer network where
15   the notice is posted. Such an additional database may also be stored in a wireless portable computer to enable a user to readily investigate a range of products while present in a retail location.

The implementing server can also be directly linked to certain sites on the global computer network. Accordingly, a product manufacturer can have its site
20   linked to the server based on the UPC's of products it manufactures so that upon entry of one or more of the relevant UPC's, an individual will not only view information retrieved from the server's database, but also have his/her computer connected to the linked site. Alternatively, a manufacturer may be permitted to set up a web page on the implementing server so that when a user enters the UPC of a
25   particular product he/she will directly communicate with the local web page for the

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designated product.

It is to be understood that the use of UPC's with the subject invention is convenient, in that the UPC system is presently in place and widely used, but it is not actually necessary for its implementation. Alternative product identification systems, e.g., the International System of Book Numbers (ISBN), can also be used to initiate a search. Additionally, means may be provided for converting UPC's to such other product identification systems to expand and facilitate product searching. As a further alternative, the administrator of the implementing server/database can create a numeric/alphanumeric identification system or code which may be in machine readable (barcode) format for connecting to other information stored therein. By creating such a system, not only products, but also services and businesses can be assigned identification numbers. Such identification numbers also can be conveniently used to communicate with designated web pages on the server or the global network.

A further capability for facilitating network searching may be provided that enables a user to "plug in" to a graphical browser, such that by entering the category of product item to be searched followed by the UPC number in the URL entry line of the browser, the product search will be carried out directly without the user first having to go to a web site and then searching for the product information. Alternatively without a browser "plug in", the user could just enter a specific URL web address into any graphical global network browser with the optional category and with a UPC or code number to let the implementing server institute the search.

The system may also be used in sales promotions by enabling a manufacturer to place its UPC, or a server-supplied identifying code, whether in machine readable form or not on a magazine or newspaper ad, and directing that

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the UPC or code be used to access the implementing server for further information. A business card or letterhead may be similarly bar-coded to facilitate contacting a company or its website or e-mail address through the server. Further, a magazine or periodical publisher may index the pages of a publication with such barcodes or

5   use existing barcodes enabling a user to readily order copies of articles or pages from a website or the server by e-mail or even allow the user to enter a discussion group on the particular article or product.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. is a block diagram illustrating a system in accordance with the present invention.

FIG. 2 is a flowchart illustrating an exemplary procedure for searching

5   a global network in accordance with the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention is directed to providing an electronic or computerized search system that interacts primarily with global computer networks, particularly the Internet, using a search-object-related code, such as a product or

5   manufacturer identifying barcode to rapidly and effectively obtain a supply of product-related information for presentation to a user. In accordance with the invention, as seen in FIG. 1, an individual, using a suitable terminal 10, typically a desktop computer 12 and modem connection 13, can access an implementing server 14 which is provided with a database 11 of product and manufacturer

10   identifying codes, preferably UPC manufacturer codes, and related information. To obtain information relating to a particular product and its manufacturer, the individual obtains the product's UPC such as from a package or advertisement. The UPC can be entered into the computer 12 through manual input numerically, or, alternatively, entered digitally through the use of software and a hand-held

15   scanner 16 adapted to read codes such as UPC barcode encryptions. The user may then transmit the entire UPC from the desktop computer 12 through the modem 13 to the implementing server 14. The server is programmed to read the manufacturer's code from the UPC and, using the UPC database 11, identifies the manufacturer. The server 14 may then be activated to send appropriate

20   information from a local site 15 therein back to the computer 12 for storage or viewing, and to perform a search of the global computer network 18 or local site 15 to locate sites relating to or operated by the manufacturer. Additionally, the server 14 may search the global computer network 18 or local site 15 on a product basis to locate other sites containing the UPC under search. To aid the server, and reduce

25   search time, it is preferred but not required that the user identify the general

category of the product (auto, book, music or movie cassette, food, hardware, software, etc.) when the UPC is entered. Based on the manufacturer information, and/or the selection of product category, the implementing server 14 is preferably programmed to initially search sites where a greater likelihood of uncovering a

5   particular UPC exists. For example, there is a greater likelihood of uncovering a UPC identified as corresponding to a food product in a food-related site, than at other sites. Once a matching UPC has been located, the server 14 identifies the product description associated therewith. Using "parsing" technology, the server may then "pull out" the product description, transmit it to and place it in the random

10   access memory (RAM) or storage 17 of the desktop computer 12, and proceed to perform further searching relying on the product description to uncover relevant information. The server 14 can accordingly quickly assemble a collection of product-related and manufacturer information in the RAM or storage 17 of the desktop computer 12. The collection of assembled or aggregated information is

15   then available for the individual's consideration all at once at any time. For example, information regarding product availability and pricing can be obtained, including a pre-determined lowest price for comparison with the prices of the relevant sources. Preferably, the assembled information will also provide the individual with the name of a source for purchasing the particular product, and,

20   further, the server can automatically link the individual with the source's site on the global computer network. As will readily be seen, the system of the invention permits the individual to avoid the time-consuming hassle of performing multiple "key word" searches on the global computer network to uncover the desired collection of product-specific information on a trial-and error and/or step-by-step

25   basis.

In an enhancement of the system, the UPC can be input into a wireless portable computer 20, e.g., a Portable Digital Assistant (PDA), or wireless internet or server accessible phone and transmitted either directly or indirectly to the implementing server 14 to obtain product information. With this capability, an

5   individual can investigate a product while present in a retail location and contemplating purchase of the product. The portable computer 20 may be provided with software to interact through a wireless transmission path with the server 14 and obtain the information as described above at the retail location. Conversely, PDA's have been developed which include a scanner 16' for reading an encrypted

10   barcode and software for deciphering and storing the encryption. These PDA's can be used advantageously to provide an individual with a handy tool for easily collecting UPC's while in conventional retail outlets for immediate or later use.

As another enhancement of the system, an additional database 19 can be created and located in the individual's desktop or portable computer to

15   maintain a library of UPC'S therein. For example, the UPC codes of various purchased products can be entered into the library. The library of UPC's is then transmitted to the implementing server 14 to allow for periodic monitoring of the global computer network 18 to uncover relevant bulletins and/or notices. Thus, for instance, an individual who purchases a baby stroller can enter the UPC code into

20   the desktop computer 12, have the UPC code transmitted to the server 14, and be automatically informed of any notices relating to the baby stroller (e.g., recalls) or similar products. In a preferred embodiment, the server 14 generates a hyperlink connection between the desktop computer 12 and, by activation, the relevant site on the global computer network 18 where the notice is posted. When such an

25   additional database 19 is stored in a wireless portable computer 20 it enables a

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user to readily investigate a range of products while present in a retail location.

The implementing server 14 can also be directly linked to certain sites on the global computer network 18. Accordingly, a product manufacturer can have its site linked to the server 14 based on the UPC's of products it manufactures so

5   that upon entry of one or more of the relevant UPC's, an individual will not only view information retrieved from the server's database 11, but also be connected to the linked site on the global network 18. Further, a manufacturer may be permitted to set up a web page on the local site 15 in the implementing server 14 so that when a user enters the UPC of a particular product he will directly communicate with the

10   local web page for the designated product.

While the use of UPC's with the present invention is convenient, in that the UPC system is currently in place and widely used, it is not actually necessary to implementing the invention. Alternative product identification systems, e.g., the International System of Book Numbers (ISBN), can also be used to initiate

15   a search. Additionally, means may be provided for converting UPC's to such other product identification systems to expand and facilitate product searching. As a further alternative, the administrator of the implementing server/database can create a numeric/alphanumeric identification system for connecting to other information stored therein. By creating such a system, not only products, but also

20   services and businesses can be assigned identification numbers. For example, a restaurant franchise can be assigned an identification number which is placed (in numeric or alphanumeric form or as barcode encryption) on advertisements. An individual can then obtain information regarding the franchise's services (e.g., prices, locations) by entering the identification number into the implementing server

25   and be linked to a site designated by the franchise. Such identification numbers

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also can be conveniently used to communicate with designated web pages on the server.

A further capability for facilitating network searching may be provided that enables a user to "plug in" to a graphical browser. The user enters the category

5   of product item to be searched followed by the UPC number in the URL entry line of the browser, and the browser is then used by the implementing server to carry out the product search directly without the user first being connected to a web site for viewing and then searching for the product information.   Alternatively without a browser "plug in", the user could just enter a specific URL web address into any

10   graphical global network browser with the optional category and with a UPC or code number to let the implementing server institute the search.

The system is especially adaptable to use in sales promotions by enabling a manufacturer to place its UPC, or a server-supplied identifying code, on a magazine or newspaper ad or other document, and directing that the UPC or

15   code be used to access the implementing server for further information. A business card or letterhead may be similarly bar-coded to facilitate contacting a company or its website or e-mail address through the server. Further, a magazine or periodical publisher may index the pages of a publication with such barcodes or use existing barcodes enabling a user to readily order copies of articles or pages from a website

20   or the server by e-mail or even allow the user to enter a discussion group on the particular article or product.

A preferred exemplary procedure for utilizing the present invention beginning with a user entering a UPC number until the search results provide stored information for displaying manufacturer, product, web page, and other information,

25   will now be described with reference to FIG. 2.

Step 1:   A user, by means of an electronic terminal, e.g., a computer, inputs

selected barcode information on the object of the search, e.g., a UPC

number, and a selected optional product category to the web site (URL)

of an implementing server containing databases relating the input coded

5   information and product category to other web sites on a global network.

Step 2:   The server is programmed to run extensive checks to verify that the UPC

number entered is valid. These checks may include making sure that the

length of the number is valid for the category selected, that books begin

with "978", that the checksum digit is correct, that no alpha characters

10   are entered where not allowed, and several other steps depending on the

category selected. If the UPC is not valid, a signal is returned to the input

terminal to indicate the UPC is incorrect. A valid UPC is coupled to the

next step.

Step 3:   If a book or audio book category is selected, the UPC number is

15   converted to an ISBN number, and other appropriate conversions may be

carried out. After any necessary conversions, the number is used to

address the server databases.

Step 4:   The server's UPC manufacturer's databases are queried (using the first 6

digits of the UPC number) to find the most current information on the

20   publisher and/or manufacturer identified by the UPC code. The server's

data sources indicate the category or categories of the products for which

the identified publisher and/or manufacturer is registered, and that

information is used to verify that the user input the correct optional

product category. If the user inputted an incorrect or unknown category,

25   what data sources to use to find the product will be indicated.

Step 5:   Many sources are then queried (both local databases and Internet databases) using the UPC or ISBN number to find the most current information available on the product of the selected category.

Step 6:   If the product information is found, the information is sent from the server

5   and stored in memory at the user terminal for use together in a body at any time. Also, a "Search Results" web page may be displayed with all the appropriate information, including links (either by UPC number or product description) to many other sources for additional information.

Step 7:   If the product information is not found, a signal is sent from the server

10   and a web page is displayed indicating such, and allowing the user to input (Step 1) an alpha description of the product that is being sought. If the manufacturer's information is then found (Step 6), it may be stored and displayed based on the UPC number entered.

Step 8:   To further the product information search, the system then reverts to

15   "Step 6", using the user-input alpha description as a link to the other sources for additional information.

Step 9:   When all of the selected product and manufacturer information has been searched and found, it will be collected and stored in a database in memory at the user terminal enabling the user to readily review all of the

20   found information at one time at any time.

Consequently, by simply once inputting, from an electronic terminal to an implementing server, selected coded and category information relating to products and their manufacturers, publishers, and commercial or other providers or suppliers, a user can automatically search and collect a body of pertinent

25   information available from many sites on a computer network and store all of the

collected information for consideration at one time.

It will be understood by those of skill in the art that a variety of combinations of hardware and software may be used to implement all of the features of the invention and that the ability to select, assemble, and connect the

5   hardware and adapt and write the software for such combinations, will be readily within the purview of the skilled artisan using the foregoing descriptions and suggestions without the need for undue experimentation. Applicant has assembled and is operating such a system but it will be appreciated that its description here would serve no practical purpose by way of enablement as it would be too

10   specialized and extensive to include in this application and is constantly being changed and updated during testing. Also, technological progress in the field would probably render such a particular current embodiment obsolete by the time this application issues.

WHAT IS CLAIMED IS:

1. An interactive search system for obtaining a supply of information relating to the object of the search from a global computer network for presentation to a user, said system comprising:

5   an implementing server coupled to the global computer network and comprising database means for storing search-object-related information and associated information on where further search-object-related information can be located on the global computer network;

          a computer input terminal coupled to said implementing server and

10   operable by a user to send a coded input for accessing said implementing server, said coded input addressing said stored search-object-related information;

          means, responsive to said coded input, for activating said implementing server to use said associated information to access said further search-object-related information on the global computer network; and

15   means for collecting and storing at said computer input terminal said further search-object-related information accessed by said implementing server to provide a supply of search-object-related information from the global computer network ready for presentation to the user in accordance with the coded input.

2. A system as in claim 1, wherein said coded input comprises a

20   barcode.

3. A system as in claim 1, wherein said coded input comprises a UPC code.

4. A system as in claim 1, wherein said search-object-related information comprises product-related information and said coded input comprises a manufacturer's code and a related product category.

5. A system as in claim 1, wherein said coded input comprises a code printed on a document.

6. A system as in claim 1, wherein said implementing server has an administrator and said coded input comprises a code provided by said administrator.

7. A system as in claim 1, further comprising means for scanning said coded input into said computer input terminal.

8. A system as in claim 1, wherein said computer input terminal comprises a wireless portable computer.

9. A system as in claim 1, wherein said computer input terminal comprises a wireless internet phone.

10. A system as in claim 1, wherein said computer input terminal comprises a server accessible phone.

11. A system as in claim 1, wherein said computer input terminal comprises means for storing a library of coded inputs for selective transmission to said implementing server.

12. A system as in claim 1, further comprising means, in said implementing server, for prestoring specialized search-object-related information associated with said coded input, and responsive to said coded input for sending said associated specialized search-object-related information to said computer input terminal.

13. A system as in claim 1, further comprising means for directly

linking said implementing server to certain sites on the global computer network.

14. A system as in claim 1, further comprising means for directly linking said computer input terminal to certain sites on the global computer network.

15. An interactive search method for obtaining a supply of
5   information relating to the object of the search from a global computer network for presentation to a user, comprising the steps of:

inputting, by means of an electronic terminal, a coded input relating to the object of the search, to an implementing server containing databases relating the coded input to web sites on a global network;

10   checking to verify that the coded input is valid and making any predetermined conversions that are required for the search;

first querying said databases of said implementing server to find web sites on the global network related to said coded input;

second querying the websites found related to said coded input for
15   information regarding the object of the search;

transferring all of the information regarding the object of the search that results from said second querying of the websites, to said electronic terminal for providing a supply of information regarding the object of the search obtained from the global computer network ready for presentation to the user in accordance
20   with the coded input.

16. The method of claim 15, wherein said information regarding the object of the search comprises product-related information.

17. The method of claim 15, wherein said coded input comprises a barcode.

18. The method of claim 15, wherein said coded input comprises a UPC code.

5   19. The method of claim 15, wherein said coded input comprises a manufacturer's code and a related product category.

20. The method of claim 15, wherein said coded input comprises a code printed on a document.

21. The method of claim 15, wherein said implementing server has

10   an administrator and said administrator provides said coded input.

22. The method of claim 15, wherein said inputting step comprises scanning said coded input into said electronic terminal.

23. The method of claim 15, wherein said electronic terminal comprises a wireless portable computer.

15   24. The method of claim 15, wherein said electronic terminal comprises a wireless internet phone.

25. The method of claim 15, wherein said electronic terminal comprises a server accessible phone.

26. The method of claim 15, further comprising the step of storing a

20   library of coded inputs in said electronic terminal for selective inputting to said implementing server.

27. The method of claim 15, further comprising the steps of:

storing in said implementing server, specialized product-related information associated with said coded input; and

sending, in response to the input of said coded input, said associated specialized product-related information to said electronic terminal.

28. The method of claim 15, further comprising the step of directly linking said implementing server to certain sites on the global computer network.

29. The method of claim 15, further comprising the step of directly linking said electronic terminal to certain sites on the global computer network.
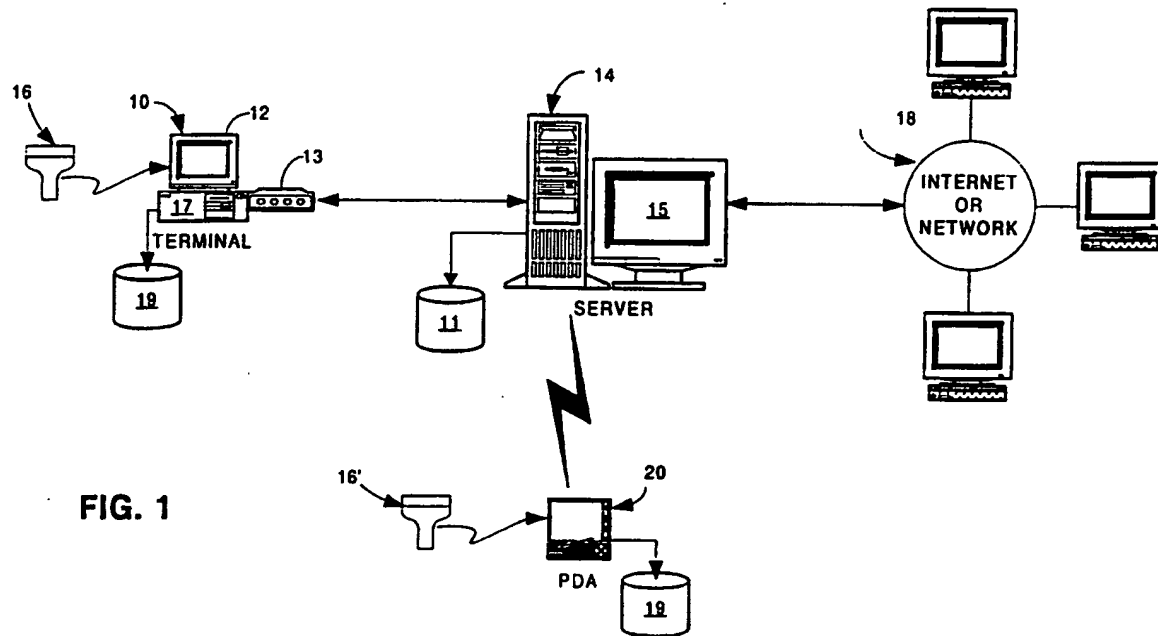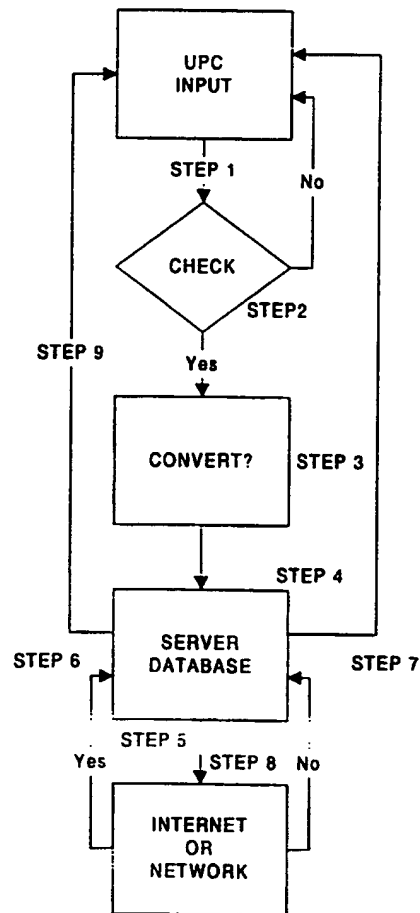
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FIG. 1

FIG. 2

INTERNATIONAL SEARCH REPORT

A.	CLASSIFICATION OF SUBJECT MATTER

IPC(7) :G06F 17/30; G06F 3/06
US CL :705/23; 707/1, 3, 4, 5, 10

According to International Patent Classification (IPC) or to both national classification and IPC

B.	FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/23; 707/1, 3, 4, 5, 10

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST, WEST

C.	DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y,P	US 5,978,773 A (HUDETZ et al) 02 November 1999, abstract, column 5, line 6 to column 12, line10.	1-29

☐ Further documents are listed in the continuation of Box C.   ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance		
"E"	earlier document published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed	"&"	document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
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